

## THE ROLE OF SCIENTISTS IN WORLD AFFAIRS

IN August last year the World Association of Parliamentarians for World Government organized an international conference of scientists to consider the dangers to world peace due to the development of nuclear weapons. At this conference three commissions were formed to discuss respectively the destructive potentials of nuclear weapons and the possible consequences of their testing in peace and massive use in war; the technical problems of the supervision and control of the production and use of nuclear weapons in order to enforce their prohibition; and the responsibility of scientists for the direction of their work, the uses to which it is put, and the public knowledge of its implications. A brief report of this conference was published in *Nature* (176, 289; 1955).

At its conference this year, the Association set aside one day for a discussion of the work of these three commissions. Opening the discussion, Dr. J. Bronowski reported that the commissions had been reconstituted as independent bodies of scientists, as it was considered that any conclusions reached would then command more respect than they would if they were associated with a political organization, however eminent it be. Recognition of the commissions by established scientific bodies is being sought, and has already been obtained from the Atomic Scientists' Association. It is intended that eventually, by consultation among interested scientists, agreed statements shall be drawn up and published.

Passing on to consider in more detail the work of the third commission, that on the responsibility of scientists, of which he is the secretary, Dr. Bronowski reported that an interesting exchange of opinions had taken place, but that the members of the commission had not yet got to the stage of drawing up an agreed statement; so at present he could only outline some of his own views. He recalled how the sight of the devastation at Nagasaki had convinced him that it is the duty of scientists to work to bring about a universal understanding of the implications, both for good and for evil, of the development of atomic energy. They have this responsibility not only because of their specialized knowledge but also because they have learned to approach problems in a scientific way. They know full well that the most subtle theory is useless if it cannot stand up in a world of hard facts. It is useless, for example, to talk eloquently about raising living standards throughout the world if there is not even the possibility of making available the energy necessary to do it, as indeed there was not until the first atomic pile was successfully operated in 1942. Thus it is particularly important in political discussions to learn what is practicable and what is not, and to act accordingly. The scientist knows also that the end never justifies the means, or rather that the end cannot be distinguished from the means. The results can never be altered to fit the theory. This professional integrity of the scientist is needed also by those who have to tackle problems concerning the affairs of men.

Reporting on the activities of the second commission, that on the international control of atomic energy, Dr. P. E. Hodgson, its secretary, said that an account of its discussions at the 1955 conference,

together with a survey of the main problems to be studied, had been published in the *Atomic Scientists' Journal* (5, 209; 1956). He went on to survey the main developments in the field of international control during the past year. On one hand there have been several encouraging examples of international co-operation on atomic energy, such as the Geneva Conference in 1955 on the Peaceful Uses of Atomic Energy, the European Organization for Nuclear Research (C.E.R.N.), and Euratom; but, on the other hand, the power and efficiency of nuclear weapons have steadily increased. It is now possible for any one of the major atomic Powers to inflict on another, without warning, severe and widespread damage of the most lasting kind. But such a blow would not prevent an equally devastating retaliation. This situation is gradually hardening due to the development of intercontinental rockets, against which there is even less defence possible than against high-altitude aeroplanes. Thus international control is becoming steadily more difficult, though even now it would not be impossible if wide powers of inspection were given to a control agency. Any plan for international control would, however, always have to take into account the possibility of hidden stocks of fissile material that could not be detected by any physical means. The most effective and practicable preliminary steps towards international control are the cessation of tests of nuclear weapons and of long-range rockets.

The work of the first commission is being temporarily suspended in view of the establishment of a United Nations commission with similar terms of reference. It will reconvene to study the report of the United Nations commission when this is published.

In the ensuing discussion, Prof. A. Haddow pointed out that the scientist has no mandate to decide the future of the world. His main duty is to publicize the details of his work, and to educate the public to an understanding of their implications. Then, as a citizen, he takes part in the political debate to decide the applications of scientific knowledge that shall be made. The growing number of contacts between scientists and politicians are greatly facilitating the diffusion of the new knowledge. Finally, he considered that there is a very strong case, on scientific, humane, medical and political grounds, to cease tests of nuclear weapons.

Prof. B. G. Whitmore brought out clearly that the international control of nuclear weapons is not possible as the nations are organized at present, owing to the possibility of hidden stocks of fissile material. But it may be possible to organize the nations into one body so that a *supranational* control becomes practicable. This was supported by Prof. R. W. Ditchburn, who urged scientists to play their part in the creation of a strong interwoven network of international co-operation.

In his concluding remarks, Dr. Bronowski underlined once more the dual nature of the task of the scientist: to assist in keeping and building peace, on one hand, and in raising living standards on the other. It is in these two key roles that the scientist has a great responsibility to the rest of human society.

P. E. HODGSON